



Irondale Human Geography

November 13, 2019

BEFORE WE BEGIN:

Get your Application Assessments Finished!!

Knight Time or After School

**Number of students per class that needs to complete
Application Assessments**

	<u>Period 2</u>	<u>Period 3</u>	<u>Period 6</u>
Unit 1 App A\$\$	8	3	9
Unit 2 App A\$\$	9	6	7

Domesticating animals - taming them so they can be used to help humans

Animals used for food (meat, dairy) and wool



Domesticating animals - taming them so they can be used to help humans

“Draft animals” used for helping do other work (like pulling a plow)



3. Describe how the ability to domesticate animals helped some regions develop agriculture sooner than others. Give at least ONE specific example to support your reasoning. (p.106-107)

- Southwest Asia had several animals found in the region that were able to be domesticated and allow humans to develop agriculture (provide food, work more land, move more items)
 - Goats, sheep, cattle, hogs
- Horses native to Central Asia and Chickens native to Eastern Asia provided labor and food sources to those people
- These people had been given a 'natural advantage'
- Places like South America and Oceania had no really good animal candidates for domestication and this lagged their agricultural development

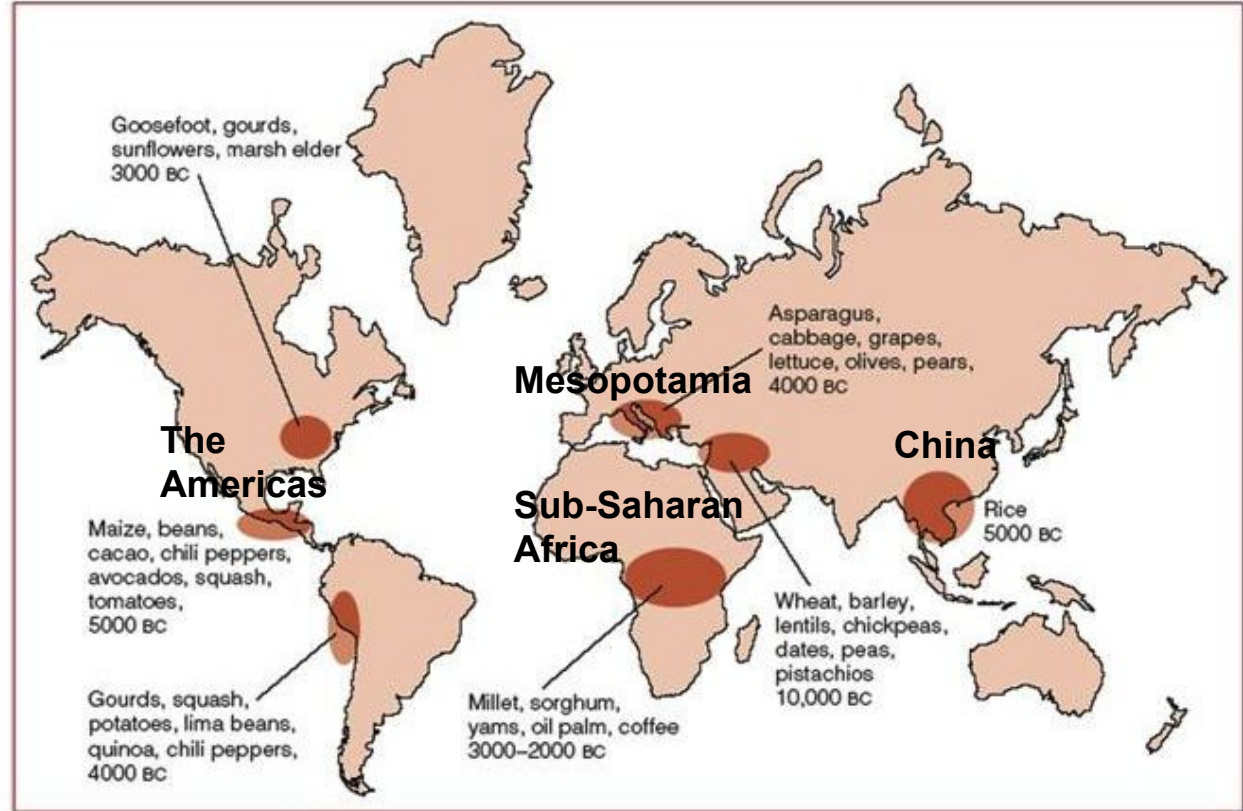
Hearth - Where something begins - its place of origin

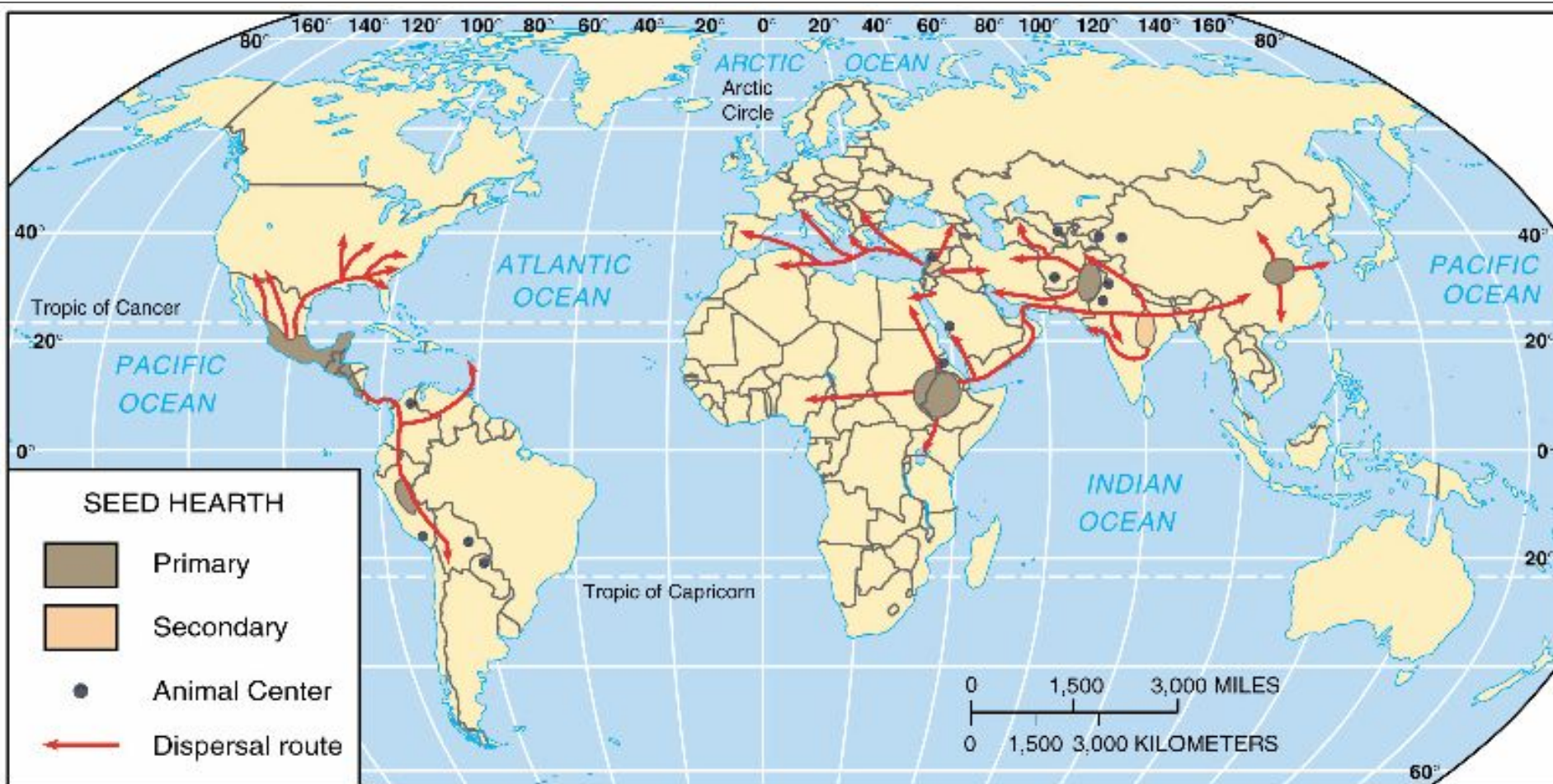
Geographers use this idea to look at how ideas, cultures and technologies spread from one area to another. It comes from the idea that the “Hearth” - the fireplace was the center of family life back when people used fires to cook and stay warm.



Major Hearths of Agriculture

4. Using the information on page 107, fill in this table and identify the **4 Major Crop Hearth Areas** and the specific crops found in these areas. Use four colors and color each hearth area on the map and correspond each color to the chart.





Crop Hearths

Years ago
 9,000 and above
 7,000–9,000
 3,000–7,000
 Unknown

Hearth
 Primary
 Secondary
 Dispersal route

BARLEY
EINKORN WHEAT
EMMER WHEAT
LENTIL
OATS

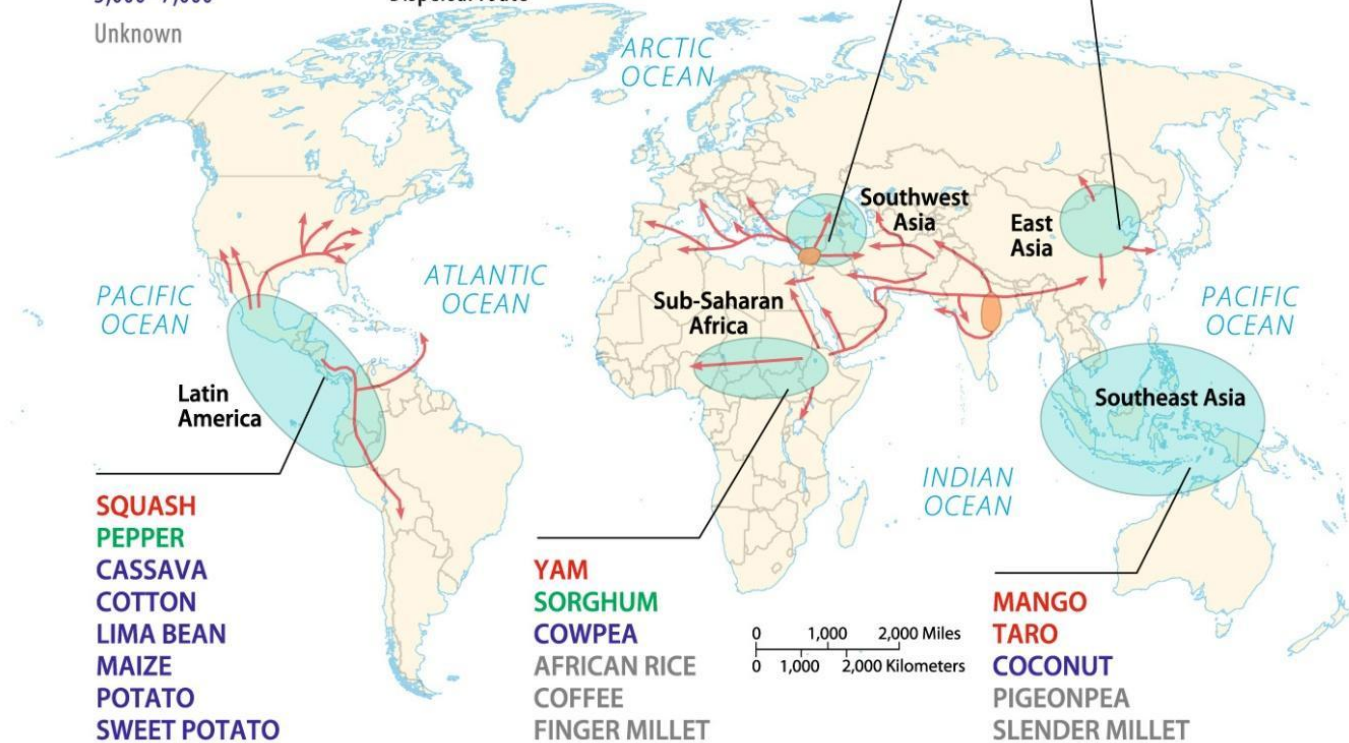
RYE
BREAD WHEAT
BROAD BEAN
OLIVE

RICE
SOYBEAN
CHINESE CHESTNUT
WALNUT

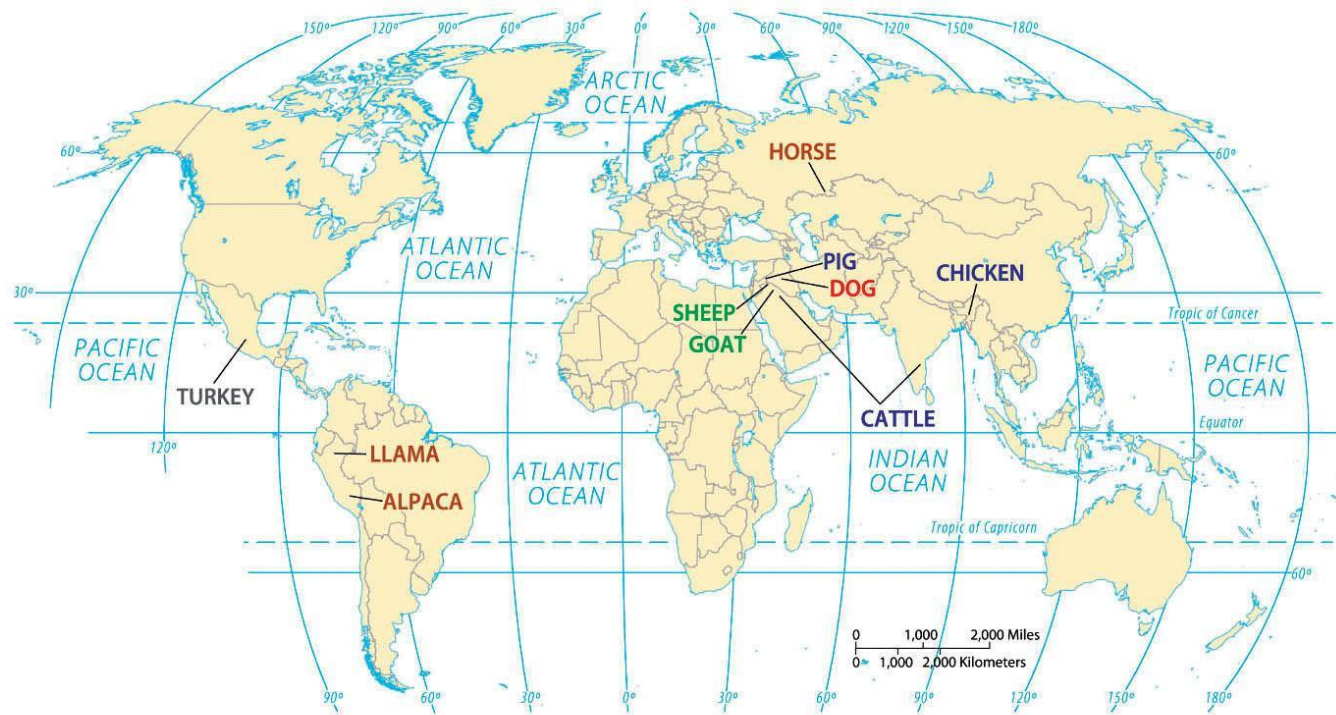
SQUASH
PEPPER
CASSAVA
COTTON
LIMA BEAN
MAIZE
POTATO
SWEET POTATO

YAM
SORGHUM
COWPEA
AFRICAN RICE
COFFEE
FINGER MILLET

MANGO
TARO
COCONUT
PIGEONPEA
SLENDER MILLET



Animal Hearths



ANIMAL HEARTHES

Years ago

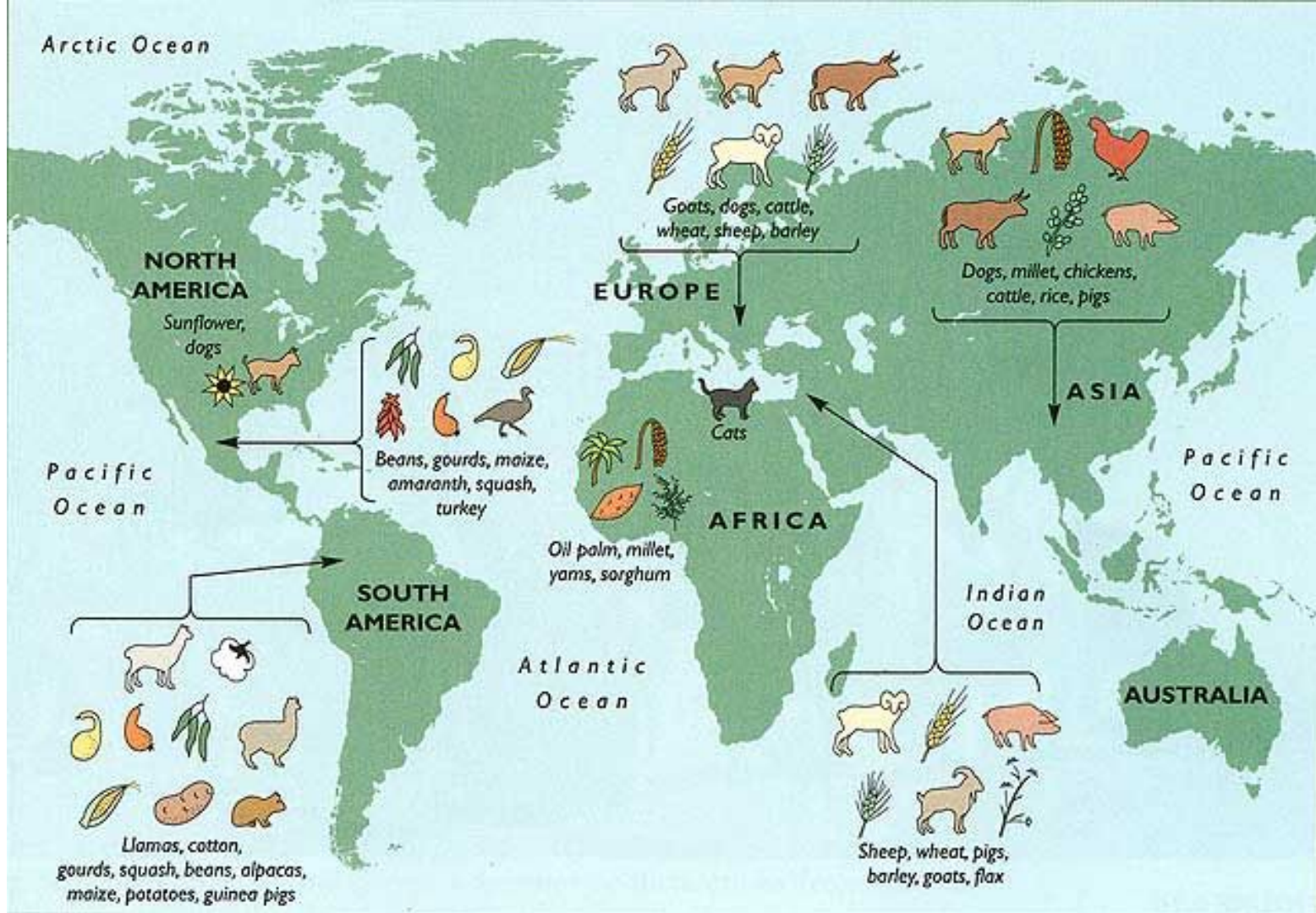
12,000

9,000

8,000

6,000

Unknown



Columbian Exchange

The Columbian Exchange was the exchange of biological organisms, mainly foods and diseases, between the Old World of Europe and Africa and the New World in the Americas.



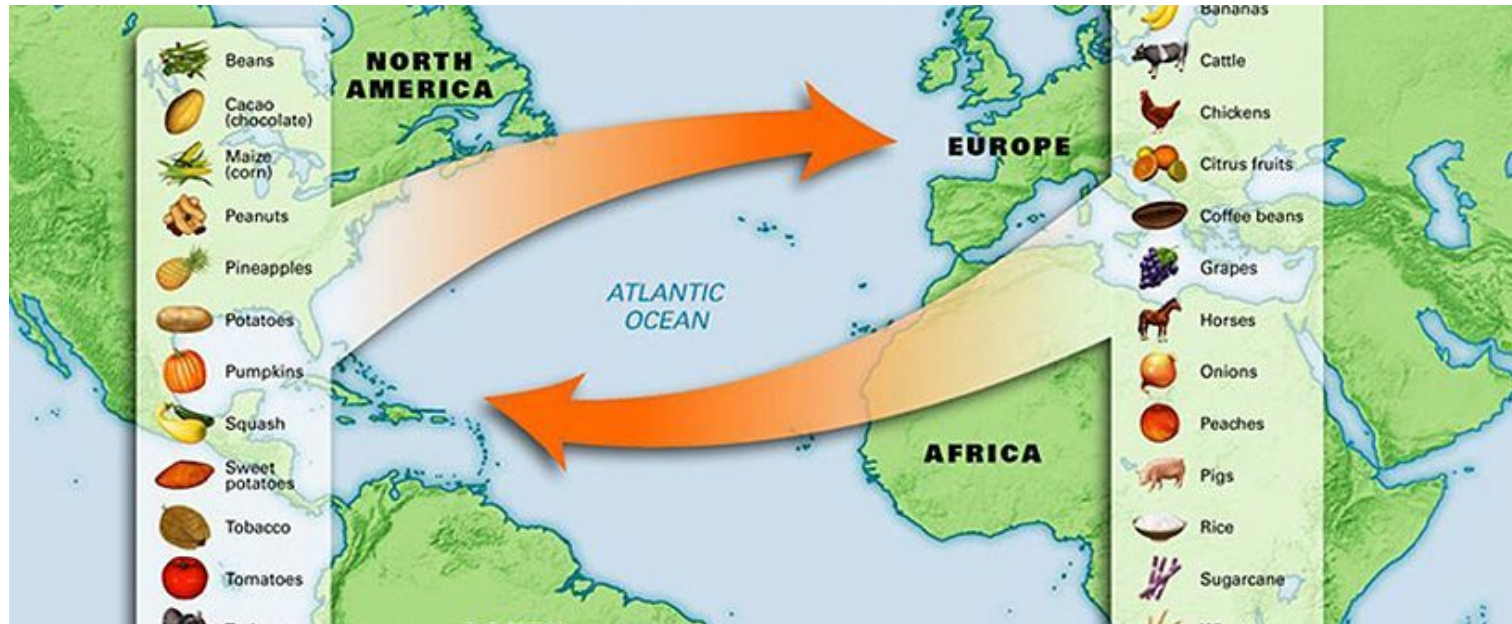
This occurred after the first sustained European interactions with the Americas began in 1492.

The Columbian Exchange was very important because it rapidly moved crops out of their hearths and to new environments.



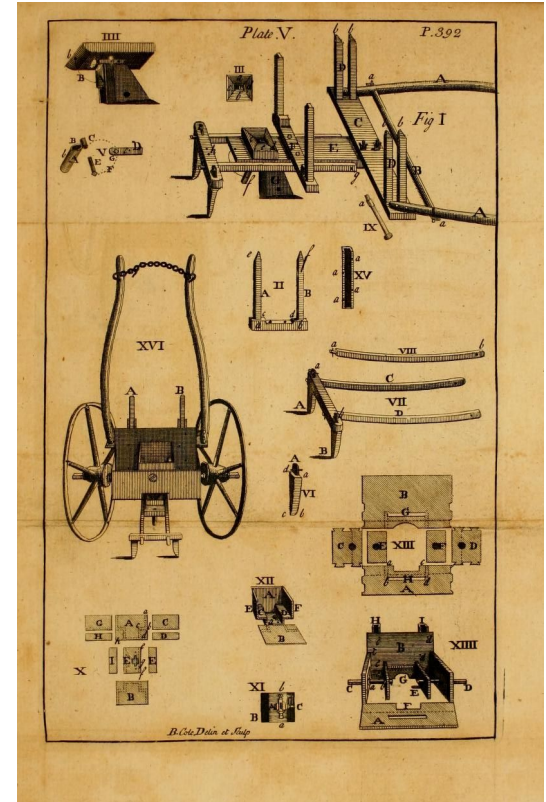
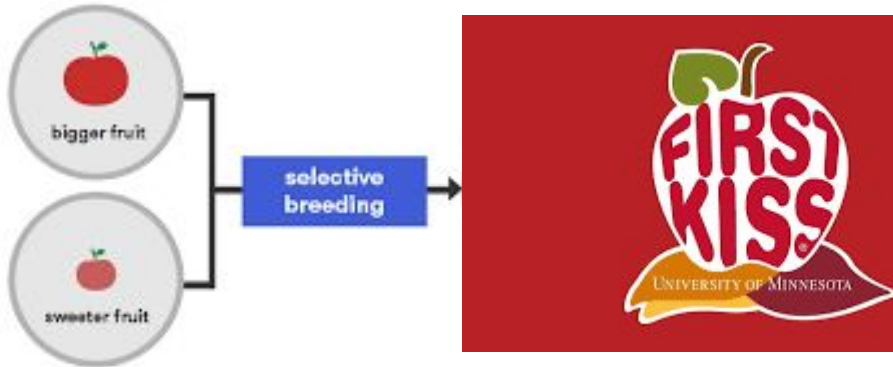
5. How did the Columbian exchange change nutrition around the world? (p. 108)

Foods spread to new parts of the world which altered nutrition and choices



What was the Second Agricultural Revolution?

The Second Agricultural Revolution was characterized by changes in selective breeding and the application of new tools and mechanized labor.



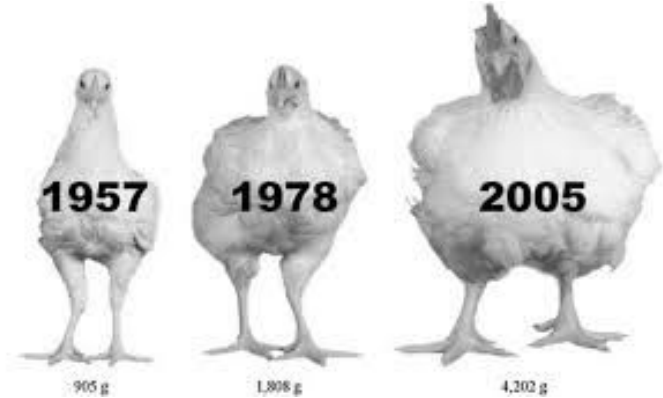
Jethro Tull's Seed Drill

Second Agricultural Revolution - What is NEW?

SELECTIVE BREEDING

Choosing the best seeds to replant the next year to get the best yield (most food per plant)

Choosing the best animals to breed the chosen characteristics (more meat, more dairy, larger drumsticks, etc)



NEW TECHNOLOGY

Expands what kinds of crops can be grown where

Expands how much work one person can do, meaning more food is produced per farm worker



Selective Breeding Example B



Brahman cattle:
Good resistance to heat, but poor beef.



English shorthorn cattle: Good beef but poor heat resistance.



Santa Gertrudis cattle
(cross of 2 breeds)

**RESULT = good beef
and resistant to heat!**

hot weather cow + beefy cow = supercow



Second Agricultural Revolution - Mechanization

Jethro Tull's Seed Drill



John Deere's Steel Plow



These tools (and others) increased efficiency and production

D. THIRD AGRICULTURAL REVOLUTION: Also known as the “Green Revolution”

- 1. **Laboratories and plant nurseries**
 - biotechnology and genetic engineering
 - higher yielding strains of grain
- 2. **First experimented with in the Philippines**
 - Scientists crossed a dwarf Chinese variety of rice with an Indonesian variety and got IR8
 - Bigger “head” of rice
 - Stronger stem – would not break
 - Better yields
- 3. **Other crops**
 - **Wheat, corn, tomatoes, bananas have benefited**
 - **Methods for fattening livestock faster**
- 4. **Consequently...famines have been abated**
- 5. **But genetic products require more fertilization and pesticides**
 - Reduces the organic matter in the soil and leads to groundwater pollution
 - Some farmers do not have access or money for genetic seeds and so they are at a competitive disadvantage

Green Revolution: the spread of western-style agricultural practices to the rest of the world

- Especially to developing countries
- Developing machines, fertilizers, seeds, pesticides and herbicides
- Helping to make stronger higher yielding seeds using plant DNA

Third Agricultural Revolution - What's new?

CHEMICALS

- Pesticides - prevent bugs from eating the crops
- Fertilizer - doesn't require manure - can be made in a factory and applied in a more scientific way - specific amounts, time of the year, etc.



What are GMO's?

GMO stands for - Genetically Modified Organism.

GMOs are different than selective breeding because GMOs are created in laboratories not nature.

Scientists make GMO's by splicing DNA from one organism into another organism in order to give it specific traits.

Ex. Golden rice



8. Why are GMOs different than selective breeding? (113)

- GMO alterations take place in laboratories
- Scientists redesign the DNA (genetic makeup) of plants
- The result is bigger, stronger, faster growing, higher yielding, and even producing their own pesticides plants

9. Describe the effect that the Green Revolution had on food production in LDCs (p. 114 - hint: look at the graph)

- GMO technologies resulted in:
 - Wheat yields more than doubled in India and Pakistan
 - Wheat yields quadrupled in Mexico

Nutrition and Hunger

Food Security: access to safe and nutritious food which will allow you to survive and live an active, healthy life.

Undernourishment: food consumption that is consistently below what is required to live a healthy and active life.

- Moderate physical activity (Minimum)=1,800 kcal (calories)
- Average global consumption=2,780 kcal, 50% more than the minimum
- U.S. average consumption=3,800 kcal

What Is A Food Desert?

Food desert: Defined by the USDA as: Food deserts are defined as parts of the country void of fresh fruit, vegetables, and other healthful whole foods, usually found in impoverished areas. This is largely due to a lack of grocery stores, farmers' markets, and healthy food providers.



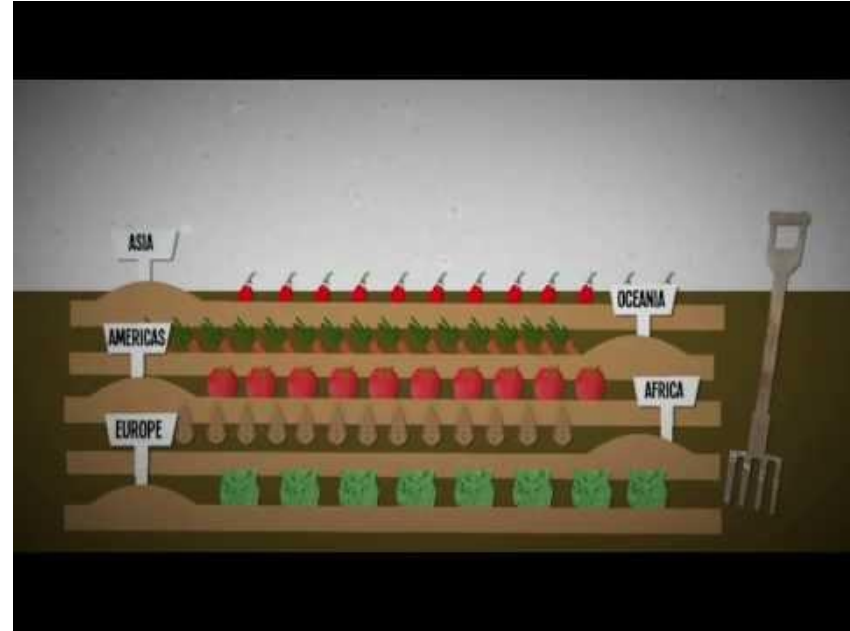
WHAT IS A FOOD DESERT?

Star Tribune Article:

<http://www.startribune.com/hundreds-of-thousands-of-minnesotans-live-in-food-deserts/421535133/>

Food Insecurity - an explanation and an example

WHAT IS A FOOD DESERT?



Undernourishment - well-fed but undernourished?



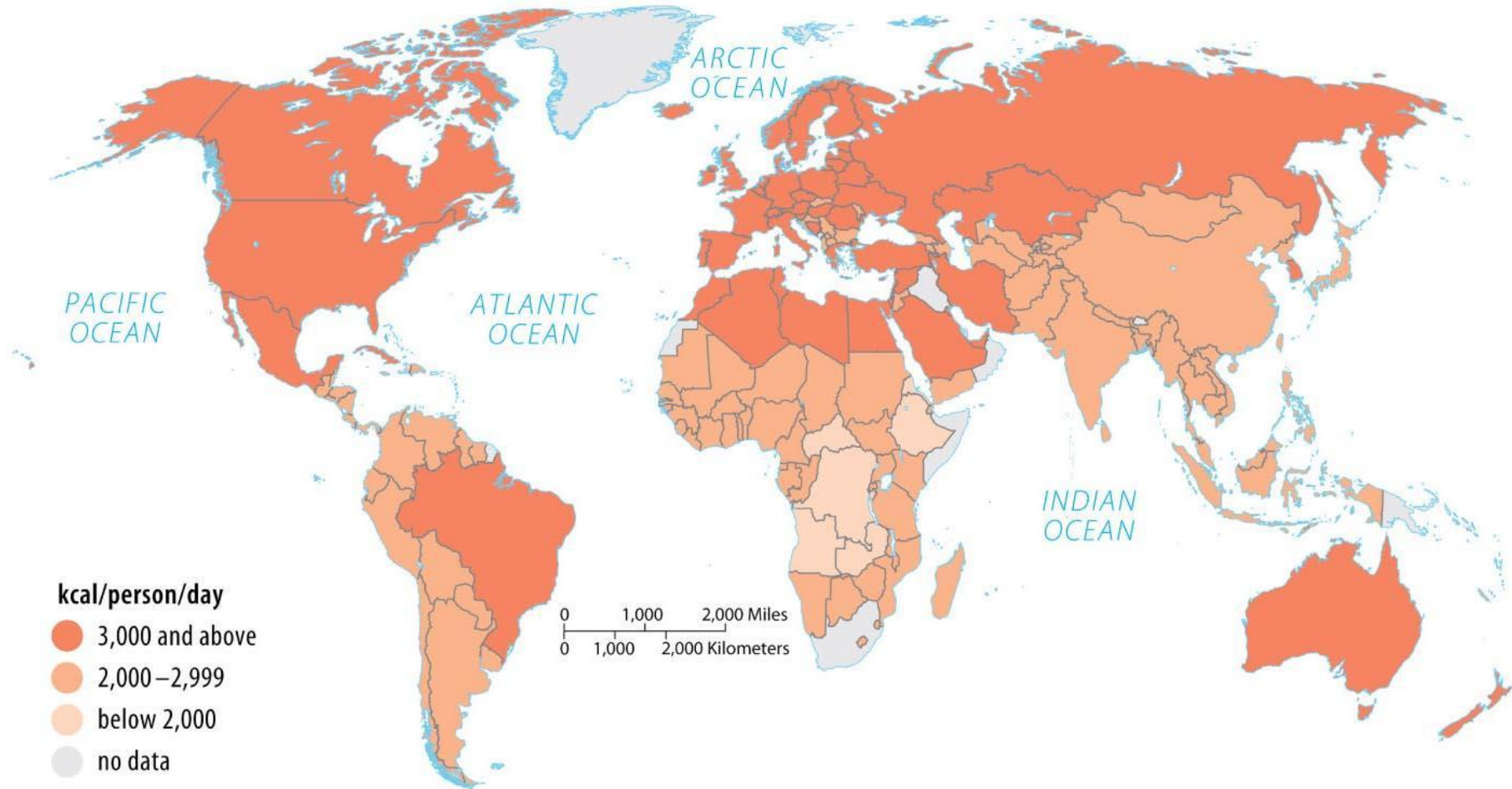
HUNGER
AND
UNDERNUTRITION

A graphic with a dark grey background and a diagonal green line. The text is arranged in three lines: 'HUNGER' in red, 'AND' in white, and 'UNDERNUTRITION' in orange.

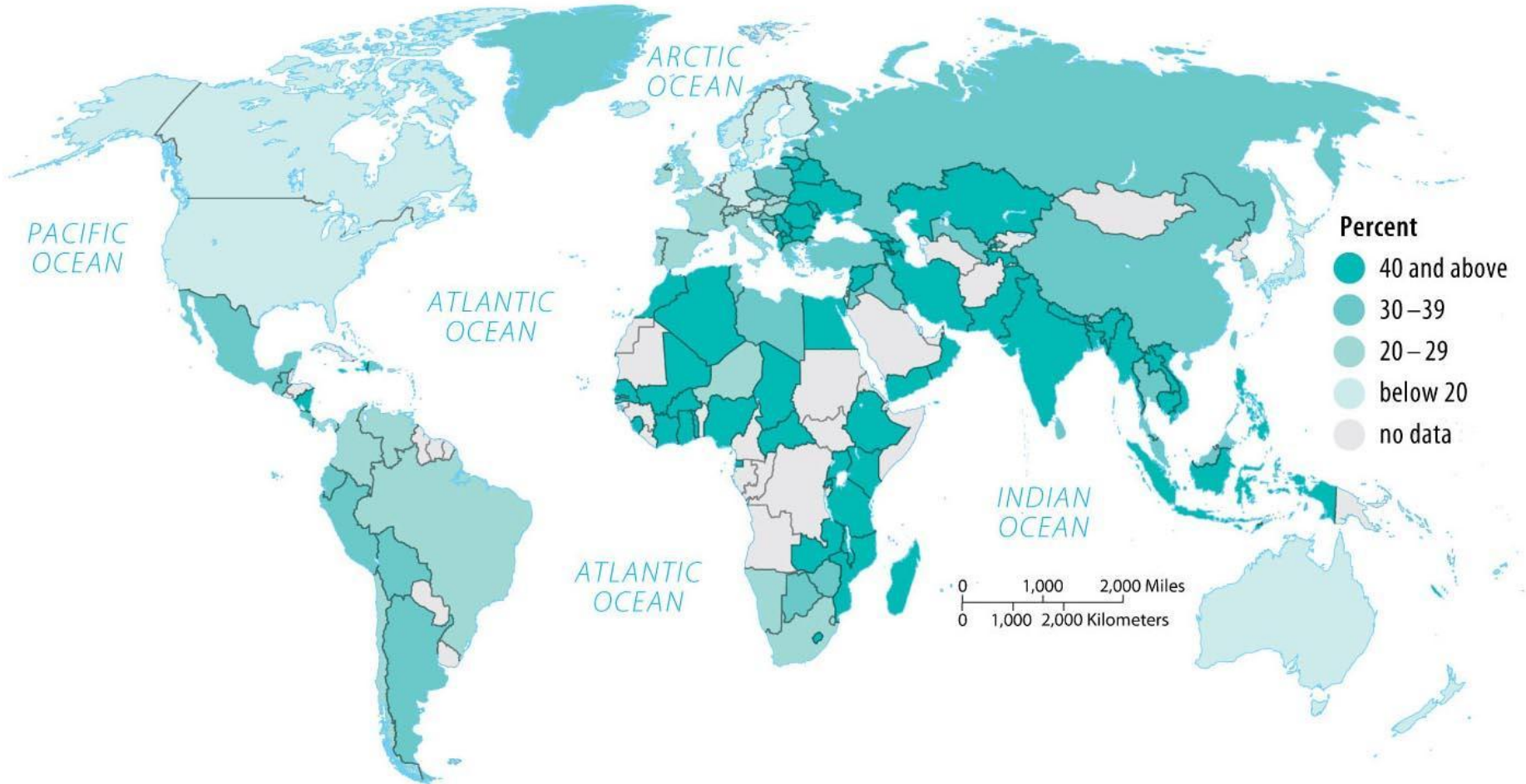
WHY ARE MILLIONS IN AFRICA
WELL-FED BUT UNDERNOURISHED?

A photograph of a wooden surface with a bowl of red lentils and a spoon. The text is centered in white, with a thin white line above and below it. The background shows a piece of white fabric on the left and a metal spoon on the right.

How many calories do people consume on average per day?



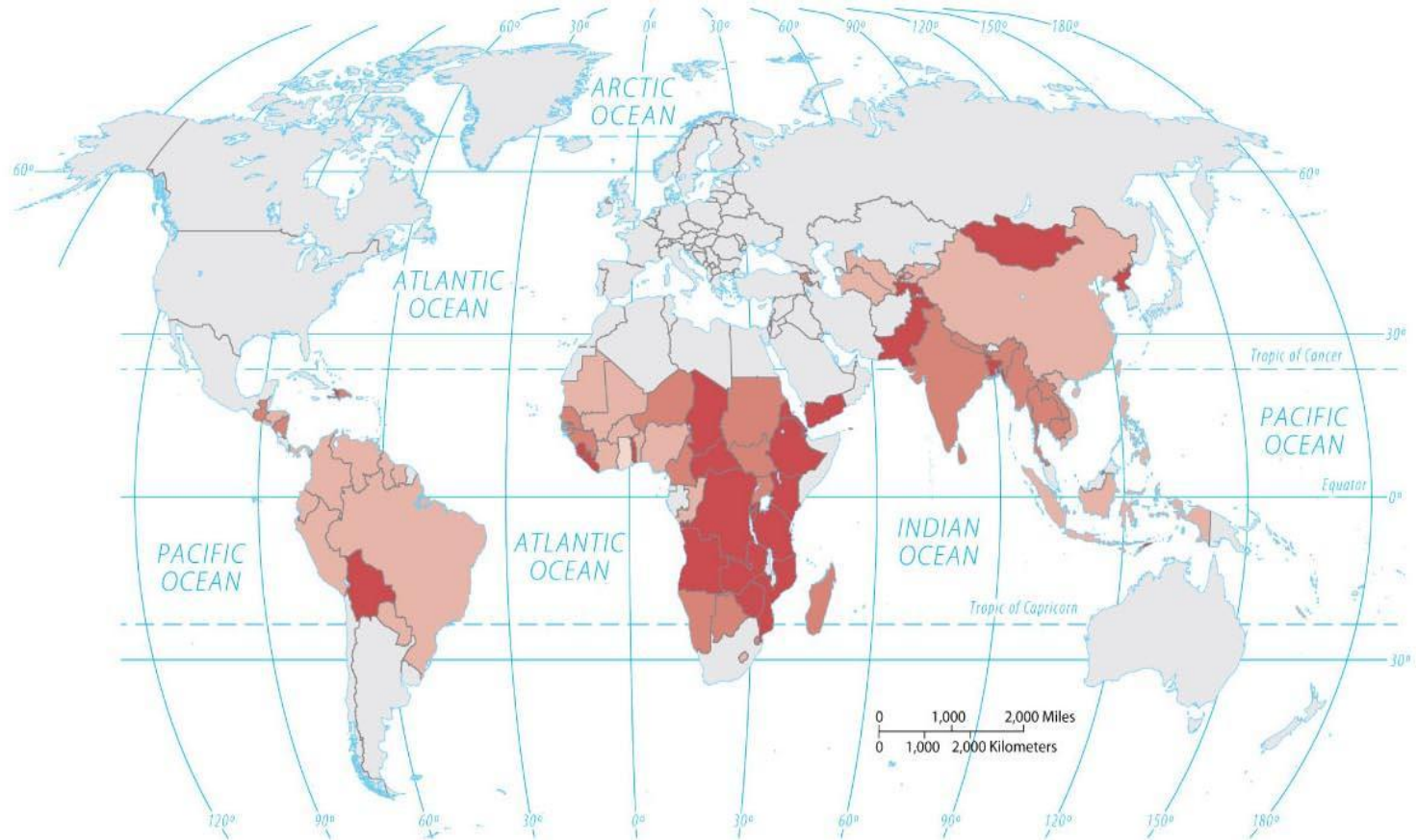
What percentage of their income do people spend on food?



What percentage of people are undernourished? Where are these people concentrated?

Percent undernourished

- 25 and above
- 15–24
- 5–14
- less than 5
- no data



Two Main Categories of Agriculture

Subsistence Agriculture: Farmers producing food mainly for family consumption
-usually a wide variety of food

Commercial Agriculture: Farmers producing food primarily for sale
-usually specialization of crops

[Commercial vs Subsistence Activity](#)

11. Why is commercial agriculture more common in More Developed Countries? (p. 115)

- The costs of machinery, chemicals, and fertilizers is very expensive
- Therefore: Commercial farming occurs more in MDCs
- Most money in agriculture is made through commercial farming and there is a large wealth gap between MDC and LDC agriculture

Types of Agriculture in LDCs

- Because they are less developed, they often do not have the money for advanced machinery, seed, fertilizers and pesticides.
- Tends to be focused on subsistence agriculture
- Tends to have a higher percentage of the population working in agriculture (fewer machines means more people)



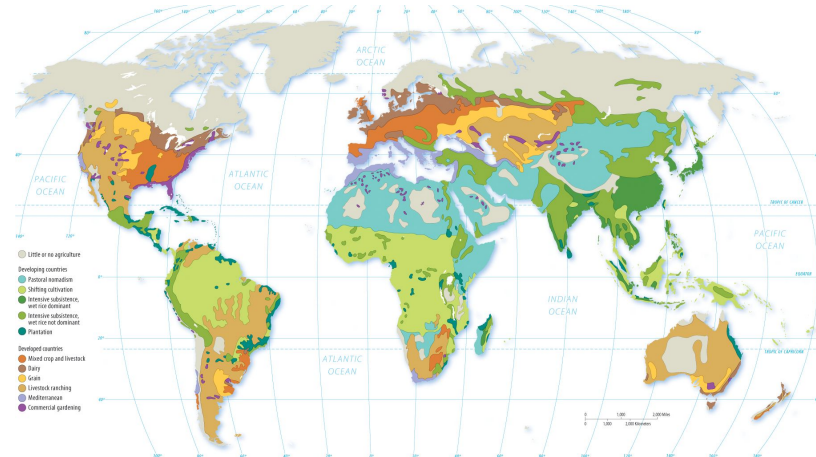
Pastoral Nomadism

Where farmers oversee and move with huge herds of grass-eating animals.

Farmers raise goats, sheep cattle, camels, reindeer, or horses.

Produces Meat and animal based clothing and shelters.

Central Eastern Asia and Northern Africa (Light Blue).



Pastoralism

What are things threatening pastoralism?

Can you see the infusion of new commercialized influences in the traditional pastoral nomadic lifestyle?



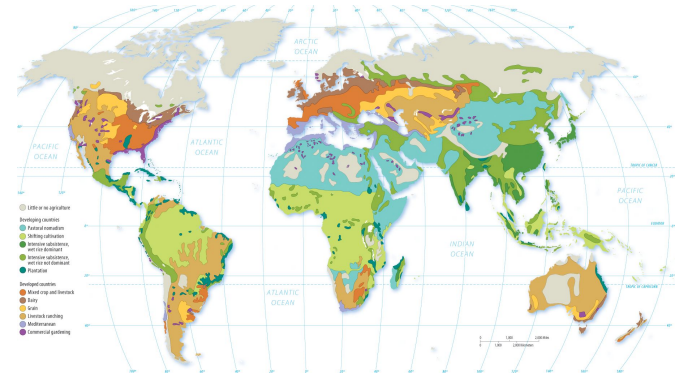
Shifting Cultivation

Subsistence

What is it? Also called Slash-and-Burn Agriculture. Involves cutting down forests and burning the trees to provide nutrients to poor soils.

Where? Rainforested areas of South America, Central Africa and Asia (pale green regions)

Crops? Corn, Cassava, Millet Sorghum, Yams, Rice



Shifting Cultivation

Notice that there is now more and more commercial farming infusing itself into traditional slash and burn areas

-What types of conflict could this cause?



13. Explain why “slash and burn” agriculture is not sustainable. (p. 117)

- Because the areas that are burned can only produce crops for 3-to-5 years
- New trees cannot grow that fast so the soils cannot be replenished
- Result is that farmers need to continue to move to new lands and burn more acres

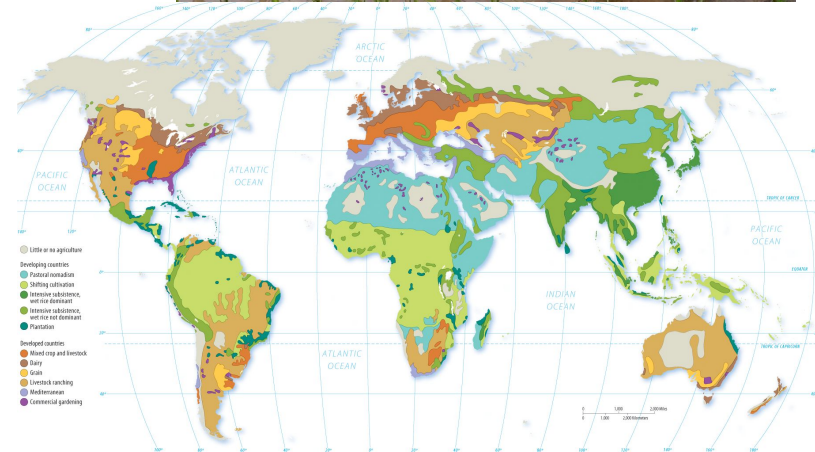
Intensive Subsistence, Wet Rice Dominant

Subsistence

What is it? Rice is grown in nurseries on land, when they are big enough they are moved to flooded rice paddies.

Where? East and South Asia (Dark Green)

What crop? Rice, sometimes wheat



Wet-Rice

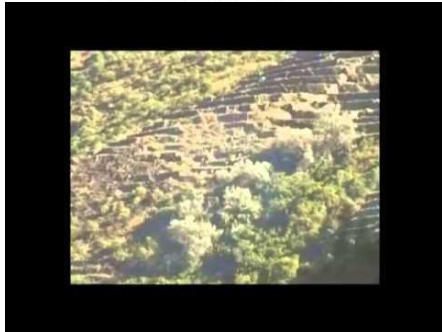
Notice why this may be considered as *labor-intensive*.



Terrace Farming



shutterstock.com • 223165879



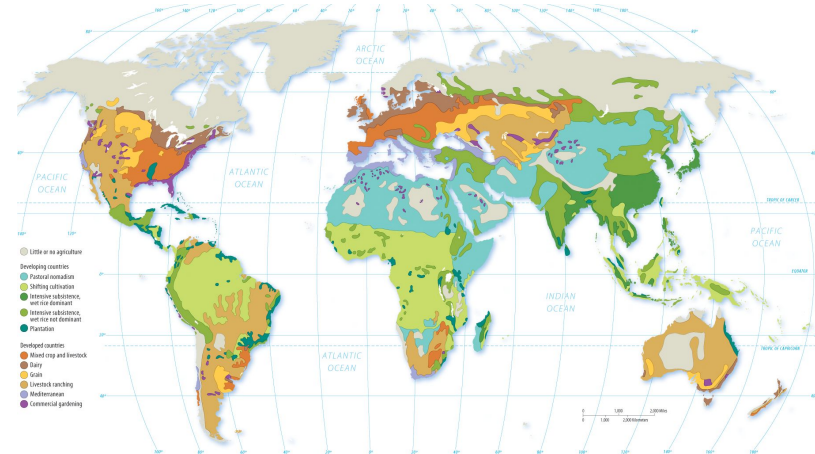
Intensive Subsistence, Wet Rice Not Dominant

Subsistence

What is it? Practiced in areas that cannot produce rice crops due to lack of rain, so they grow wheat and other cereal crops.

Where? Parts of China and Northern India (green)

What crops? Oats, Barley, Millet, and corn



Plantation

Subsistence or Commercial?

What is it? Owner has large amounts of land and a large labor force to do the farm work.

Where is it? The tropical and subtropical regions of Latin America, sub-Saharan Africa, South Asia, and Southeast Asia (Dark Blue)

Crops? Tobacco, Cotton, Sugar, Rubber, Coffee or Cocoa



14. Plantation agriculture is often controversial in LDC's because most plantations are owned by large European and North American Corporations. Using the text on page 118 finish the sentences below:

- a. One criticism of plantations is that it allows MDCs to...
- **Exploit the resources in LDCs**
 - **Workers get paid little for long grueling hours**
- b. One argument in favor of plantations is that they establish....
- **Establish the basis for commercial agriculture**
 - **It helps countries in their development**
 - **Establishing worldwide trade commodities**

Types of Agriculture in MDCs

15. Why do MDC's typically have a lower percentage of their population involved in agriculture? (p. 118)

- Tends to be focused on commercial agriculture
- Has a lower percentage of the population working agriculture because they have more **machines**, pesticides and fertilizers that make the farming more productive



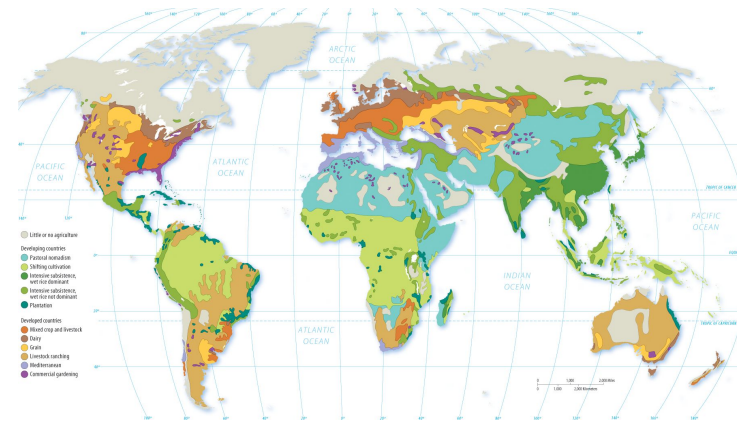
Mixed Crop and Livestock

Commercial

What is it? Farmers in this system have both crops and livestock. Crops are grown to feed livestock and manure (animal poo) to fertilize crops.

Where is it? Midwest United States and Central Europe (Orange Color)

Crops? Hogs, Chicken, Turkeys, Corn, Barley, Hay, and Oats



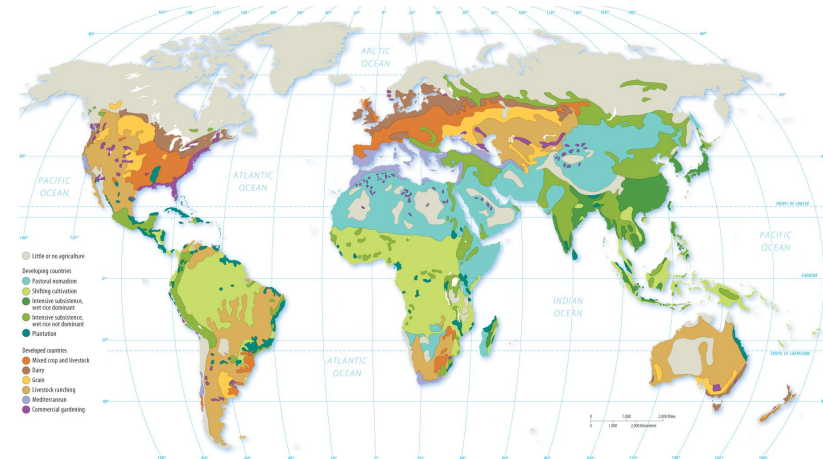
Dairying

Commercial

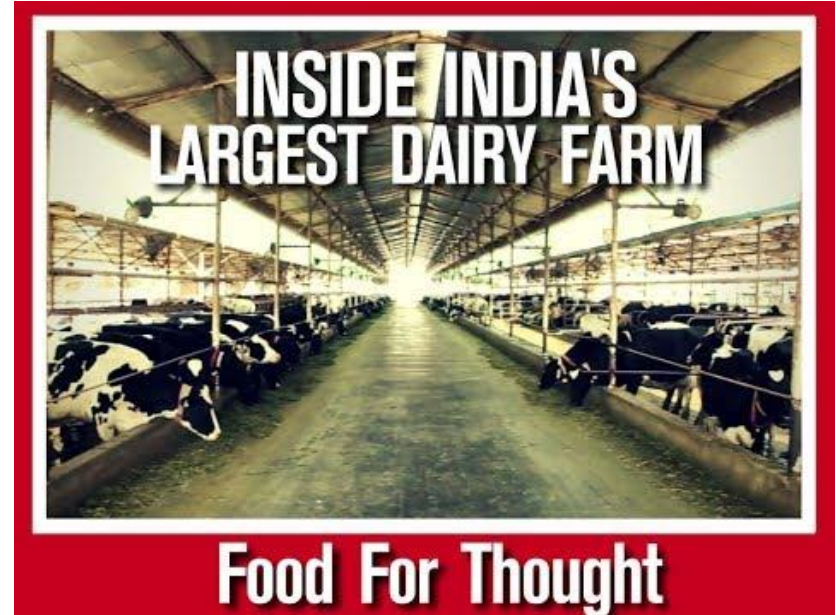
What is it? Dairy cows, Jersey and Holstein, are used to produce cheese and milk products.

Where is it? Near population clusters in the northeastern United States, southeastern Canada, and northwestern Europe. (dark brown)

Crops? Cheese and Milk



A U.S. Dairy Farm and Inside India's Largest Dairy Farm



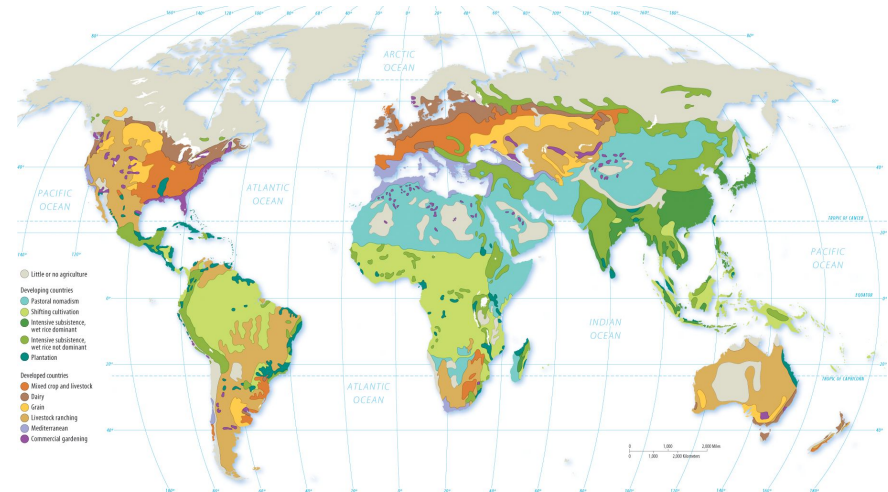
Commercial Grain

Commercial

What is it? Important grain crops are planted and harvested for Human Consumption.

Where is it? The north-central United States, south-central Canada, and Eastern Europe (Golden Yellow)

Crops? Summer wheat, Winter Wheat, Spring Wheat, Barley, Millet, Oats, Corn.



Livestock Ranching

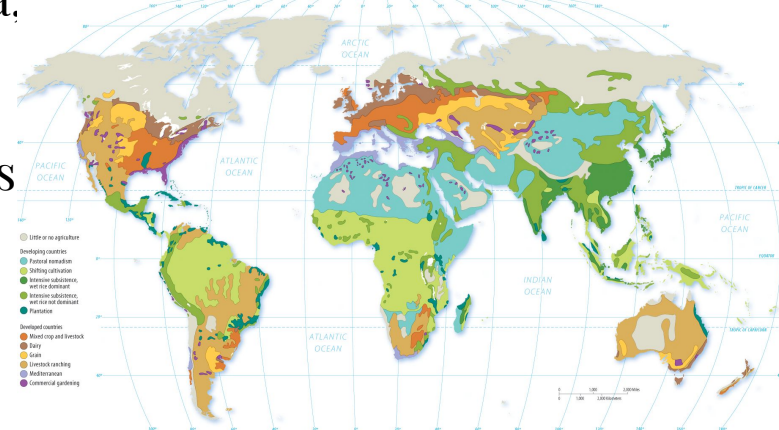
Commercial

What is it? Animals are raised to be slaughtered (killed) and to be sold for their meat. Often these animals are large and need to graze.

Where is it? The drylands of western North America, southeastern Latin America, Central Asia, sub-Saharan Africa, and the South Pacific (Tan)

Land extensive: It takes a lot of land so ranching is found in marginal areas where land is cheaper

What crops? Cattle, Pampas, Sheep



Mediterranean

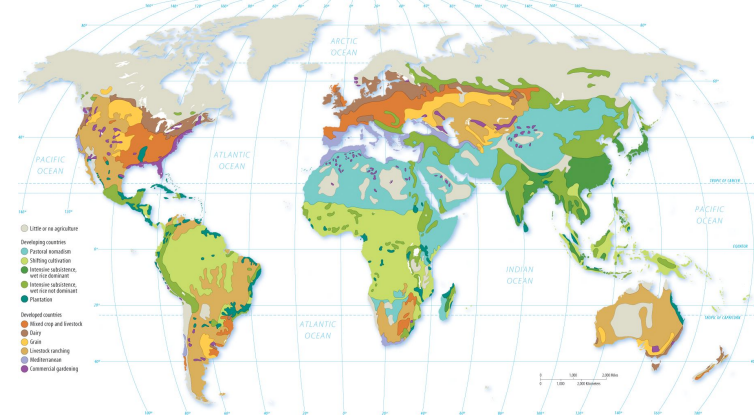
Commercial

What is it? Farming that occurs close to the sea because it relies on wet winters and dry hot summers.

Where is it? Mediterranean Sea, California, Oregon, Chile, South Africa, Western Australia (lavendar Color)

Climate? No-freeze zones; crops with long maturation periods

What crops? Grapes, Wineries, Olives, Wheat



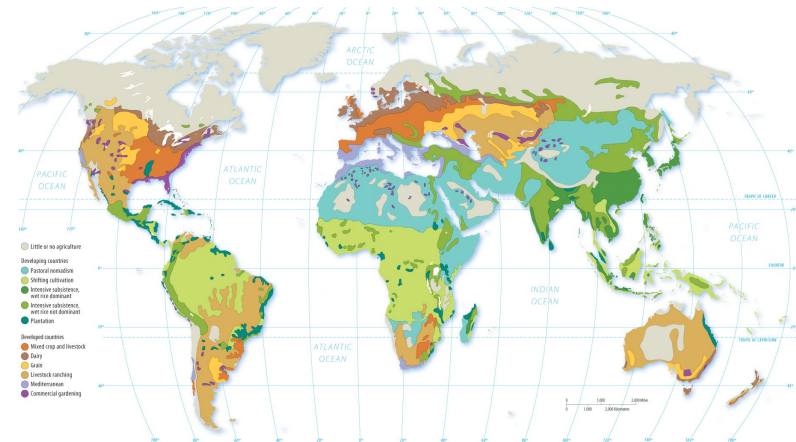
Commercial Gardening/Truck Farming

Commercial

What is it? Farmers grow fruits and vegetables and sell them to large companies.

Where is it? The southeastern United States and southeastern Australia (purple).

Crops? Peaches, Oranges



AMerica Revealed: America's Food Machine:



22. Describe how the development of new forms of transportation (trucks and airplanes) changed what kinds of foods people in U.S. cities could eat at different times of the year? (p. 122)

- Faster transportation allows foods from around the world to always be available in other parts of the world
 - For example, we can get bananas from Latin America during our winter

23. Market gardening is very common throughout the world. Recently, this kind of agriculture has been making a comeback in the U.S. and Western Europe. Describe ONE advantage of “market gardening” and “farmer’s markets”? (122-123)

- They allow farmers to grow marketable crops near urban centers with local markets
- They allow buyers in urban areas to buy fresh (healthy) produce
 - Most of this produce is grown with little chemical usage (organic)

Comparing Agriculture in LDC's and MDCs

Agriculture in LDCs

- Because they are less developed, they often do not have the money for advanced machinery, seed, fertilizers and pesticides.
- Tends to be focused on subsistence agriculture
- Tends to have a higher percentage of the population working in agriculture (fewer machines means more people)

Agriculture in MDCs

- Tends to be focused on commercial agriculture
- MDCs tend to be richer and can afford the machines, pesticides and fertilizers that make the farming more productive
- Has a lower percentage of the population working in agriculture because they have more machines

Farming Wet-Rice in Japan - Commercial or Subsistence?

